

112.4 - Trace Elements (wafer form)

These SRMs are for calibrating instruments and evaluating analytical techniques used to determine trace elements in inorganic matrices. NOTE: The nominal glass composition of SRMs 610 through 617 is 72% SiO₂, 12% CaO, 14% Na₂O, and 2% Al₂O₃.

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PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM	610	611	612	613	614	615	616	617
Description	Trace Elements in Glass	Trace Elements in Glass	Trace Elements in Glass	Trace Elements in Glass	Trace Elements in Glass	Trace Elements in Glass	Trace Elements in Glass	Trace Elements in Glass
Unit of Issue	(6 wafers)	(6 wafers)	(6 wafers)	(6 wafers)	(6 wafers)	(6 wafers)	(6 wafers)	(6 wafers)

Element (in mg/kg) Wafer Thickness (in mm) 3 and 1

Antimony					(1.06)	(1.06)	(0.078)	(0.078)
Barium			(41)	(41)				
Boron	(351)	(351)	(32)	(32)	(1.30)	(1.30)	(0.20)	(0.20)
Cadmium					(0.55)	(0.55)		
Cerium			(39)	(39)				
Cobalt	(390)	(390)	(35.5)	(35.5)	(0.73)	(0.73)		
Copper	(444)	(444)	(37.7)	(37.7)	1.37	1.37	(0.80)	(0.80)
Dysprosium			(35)	(35)				
Erbium			(39)	(39)				
Europium			(36)	(36)	(0.99)	(0.99)		
Gadolinium			(39)	(39)				
Gallium					(1.3)	(1.3)	(0.23)	(0.23)
Gold	(25)	(25)	(5)	(5)	(0.5)	(0.5)	(0.18)	(0.18)
Iron	458	458	51	51	(13.3)	(13.3)	(11)	(11)

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Element (in mg/kg) Wafer Thickness (in mm) 3 and 1

Lanthanum			(36)	(36)	(0.83)	(0.83)	(0.034)	(0.034)
Lead	426	426	38.57	38.57	2.32	2.32	1.85	1.85
Manganese	485	485	(39.6)	(39.6)				
Neodymium			(36)	(36)				

Values in parentheses are not certified and are given for information only.

In addition to the elements listed above, the glass SRMs contain the following 25 elements: As, Be, Bi, Cs, Cl, F, Ge, Hf, Hg, Li, Lu, Mg, Nb, P, Pr, Se, S, Te, Tb, Tm, Sn, W, V, Y, and Zr.

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Nickel	458.7	458.7	38.8	38.8	(0.95)	(0.95)		
Potassium	(461)	(461)	(64)	(64)	30	30	29	29
Rubidium	425.7	425.7	31.4	31.4	0.855	0.855	(0.100)	(0.100)
Samarium			(39)	(39)				
Scandium					(0.59)	(0.59)	(0.026)	(0.026)
Silver	(254)	(254)	22.0	22.0	0.42	0.42		
Strontium	515.5	515.5	78.4	78.4	45.8	45.8	41.72	41.72
Thallium	(61.8)	(61.8)	(15.7)	(15.7)	(0.269)	(0.269)	(0.0082)	(0.0082)
Thorium	457.2	457.2	37.79	37.79	0.748	0.748	0.0252	0.0252
Titanium	(437)	(437)	(50.1)	(50.1)	(3.1)	(3.1)	(2.5)	(2.5)
Uranium	461.5	461.5	37.38	37.38	0.823	0.823	0.0721	0.0721

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Element (in mg/kg) Wafer Thickness (in mm) 3 and 1								
Ytterbium			(42)	(42)				
Zinc	(433)	(433)						

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